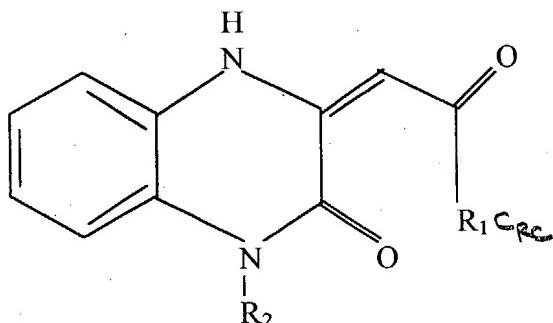


S.N. 10/024205

### We claim:

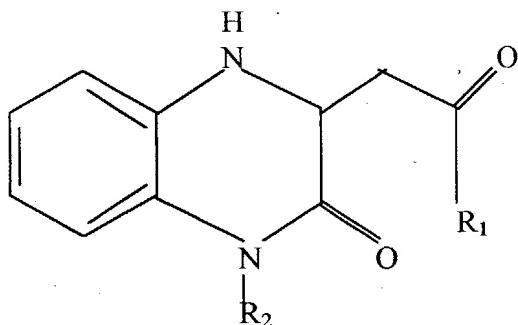
1. A process for the preparation of hydrogen peroxide comprising (a) hydrogenating a compound of formula I



## FORMULA I

wherein R<sub>1</sub> is selected from CH<sub>3</sub>, C<sub>2</sub>H<sub>5</sub> and C<sub>6</sub>H<sub>5</sub> and R<sub>2</sub> is selected from the group consisting of H and CH<sub>3</sub> provided that when R<sub>1</sub> is C<sub>2</sub>H<sub>5</sub> or C<sub>6</sub>H<sub>5</sub>, R<sub>2</sub> is H, in the presence of a palladium catalyst to obtain a compound of formula II; and

- (b) contacting said compound of formula II



## **FORMULA II**

so obtained wherein R<sub>1</sub> is selected from CH<sub>3</sub>, C<sub>2</sub>H<sub>5</sub> and C<sub>6</sub>H<sub>5</sub> and R<sub>2</sub> is selected from the group consisting of H and CH<sub>3</sub> provided that when R<sub>1</sub> is C<sub>2</sub>H<sub>5</sub> or C<sub>6</sub>H<sub>5</sub>, R<sub>2</sub> is H, with an oxidant selected from the group consisting of molecular oxygen, air and a mixture thereof, in a biphasic system selected from ethylacetate - water and chloroform-water systems to obtain hydrogen peroxide.

2. A process as claimed in claim 1 wherein the compound of formula I is hydrogenated in the presence of an organic solvent selected from methanol and ethyl alcohol.
  3. A process as claimed in claim 1 wherein the palladium catalyst is selected from Pd(10%)/carbon and Pd(5%)/carbon.
  4. A process as claimed in claim 1 wherein the compound of formula II is contacted with oxidant in the presence of an organic solvent selected from the group consisting of benzene, ethyl acetate, chloroform, dichloromethane and tert.butyl alcohol.

S.N. 10/024265

5. A process as claimed in claim 1 wherein the compound of formula I is selected from the group consisting of 3 - 2 - (oxopropyl) - 2(1H) - quinoxalinone, 3 - 2 - (oxobutyl) - 2(1H) - quinoxalinone and 3 - 2 - (oxophenyl) - 2(1H) - quinoxalinone to obtain 3 - 2 - (oxopropyl) - 1,2,3,4 - tetrahydro - 2 - quinoxalinone, 3 - 2 - (oxobutyl) - 1,2,3,4 - tetrahydro - 2 - quinoxalinone and 3 - 2 - (oxophenyl) - 1,2,3,4 - tetrahydro - 2 - quinoxalinone respectively of formula II.
6. A process as claimed in claim 1 wherein the compound of formula II is contacted with oxidant in the presence of a mineral acid.
7. A process as claimed in claim 6 wherein said mineral acid comprises dilute sulphuric acid.
8. A process as claimed in claim 1 wherein the reaction is carried out at ambient temperature.
9. A process as claimed in claim 1 wherein compound of formula II is prepared from compound of formula I in the presence of Pd (10%) - carbon - H<sub>2</sub> (30 - 40 psig) or Pd (5%) - carbon - H<sub>2</sub> (30 - 40 psig).
10. A process as claimed in claim 1 wherein the hydrogenation pressure is in the range of 10 - 100 psig.
11. A process as claimed in claim 10 wherein the hydrogenation pressure is in the range of 20 - 40 psig.
12. A process as claimed in claim 1 wherein the product is obtained in the form of an aqueous solution by removal of coloring materials from the water layer using activated carbon.